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WASHINGTON, D.C., OCTOBER 20, 1925.

DRAINAGE

S.H. McGRORY RECENTLY WENT TO AMES, IOWA, FOR THE PURPOSE OF CONFERRING WITH PROF. J. B. DAVIDSON REGARDING THE FARM IMPLEMENT RESEARCH PROJECT WHICH IS DESCRIBED IN ANOTHER PARAGRAPH. HE TOOK ADVANTAGE OF THIS OPPORTUNITY TO INSPECT THE PROGRESS OF MR. YARNELL'S WORK AT IOWA CITY AND THAT OF D. G. MILLER AT ST. PAUL, MINN.

C. E. RAMSER MADE A TRIP DURING THE PAST MONTH TO THE PANTHER CREEK DRAINAGE DISTRICT, IN WESTERN KENTUCKY, FOR THE PURPOSE OF INSPECTING THE COMPLETED WORK AND MAKING A PHOTOGRAPHIC RECORD OF THE SAME. THIS PROJECT, WHICH INVOLVED THE IMPROVEMENT OF PANTHER CREEK, INCLUDING THE CONSTRUCTION OF TWO CUT-OFFS WITH A MAXIMUM CUT OF ABOUT 36 FEET WAS PLANNED BY THIS DIVISION IN 1915. IT IS REPORTED TO BE WORKING WELL.

REPORTS FROM MESSRS. RAMSER, NORTON, CLAYTON AND SIMONS WITH REFERENCE TO RUN-OFF INVESTIGATIONS INDICATE THAT EXTREMELY DRY WEATHER PREVAILED IN THE MIDDLE WEST THROUGHOUT THE SUMMER. SOME RATHER HEAVY RAINFALL HAS OCCURRED RECENTLY BUT COMPARATIVELY LITTLE RUN-OFF RESULTED, OWING TO THE DRYNESS OF THE SOIL.

D. G. MILLER HAS BEEN DEVOTING SOME TIME DURING THE MONTH TO THE PREPARATION OF A REPORT ON THE INVESTIGATIONS TO DATE WITH REGARD TO THE MINNESOTA CONCRETE-ALKALI SITUATION. HE AND MR. MCGREW HAVE ALSO BEEN IN THE FIELD VISITING THE VARIOUS EXPERIMENTAL INSTALLATIONS.

IRRIGATION

A CONFERENCE OF IRRIGATION WORKERS IN EXPERIMENT STATIONS IN ELEVEN WESTERN STATES MET AT BERKELEY, CALIF., SEPT. 3-8, FRANK ADAMS PRESIDING. W.W. McLAUGHLIN, DR. SAMUEL FORTIER, H.F. BLANEY, WELLS A. HUTCHINS, R. L. PARSHALL, F. C. SCOBAY AND L.M. WINSOR FROM THIS DIVISION WERE IN ATTENDANCE AT PART OR ALL OF THE SESSIONS. THE PURPOSE OF THE CONFERENCE WAS TO CONSIDER PROBLEMS IN THE WESTERN STATES SUITABLE FOR INVESTIGATIONAL WORK TO BE PAID FROM PURNELL OR OTHER FEDERAL FUNDS. THE FOLLOWING SUBJECTS WERE APPROVED, ALL COMING UNDER THE GENERAL TITLE OF "FACTORS UNDERLYING THE ECONOMIC USE OF WATER IN IRRIGATION": (1) SOIL AND IRRIGATION RELATIONSHIPS; (2) PLANT AND IRRIGATION RELATIONSHIPS; (3) THE IRRIGATION WATER SUPPLY AND ITS PHYSICAL CONTROL; (4) DRAINAGE AND RECLAMATION; (5) INSTITUTIONAL IRRIGATION AND DRAINAGE RELATIONSHIPS. THE DESIRABILITY OF COOPERATION BETWEEN FEDERAL AND STATE AGENCIES WAS EMPHASIZED.

R.A. HART REPORTS THE RESULTS OF A LABORATORY TEST TO DETERMINE THE RELATIVE RATES OF PERCOLATION THROUGH A COLUMN OF SAND (A) OPEN TO THE ATMOSPHERE AT THE LOWER END, (B) IN CONTACT WITH WATER, AND (C) IMMERSSED SO AS TO PROVIDE A WICK. THE EXPERIMENT SHOWED THE RATE OF PERCOLATION TO BE LOWEST WITH THE WICK EFFECT AND HIGHEST WHEN THE COLUMN WAS OPEN TO THE ATMOSPHERE AT THE LOWER END.

J.C. MARR, ACCOMPANIED BY W.R. STEWART OF THE BUREAU OF RECLAMATION, HAS SELECTED SEVERAL ADDITIONAL DRAINAGE SYSTEMS UPON WHICH TO MAKE DRAINAGE RUN-OFF INVESTIGATIONS IN IDAHO. THE HOFF CURRENT METER WAS USED ON THIS WORK AND PROVED WELL ADAPTED TO DRAINAGE RUN-OFF MEASUREMENTS. THE POSSIBILITY OF LEASING THE HELMS TRACT FOR A PERIOD OF YEARS FOR EXPERIMENTAL PURPOSES IN RECLAIMING ALKALI LAND HAS BEEN UNDER DISCUSSION.

IN STUDIES OF EVAPORATION LOSSES FROM MOIST SOILS AT FORT COLLINS, R. L. PARSHALL FINDS THAT THE CURVES SHOW CONSISTENT LOSSES, THOSE MOST CONSISTENT APPEARING UNDER MINIMUM AIR TEMPERATURES. THREE SERIES OF SOIL TANKS ARE BEING USED WITH THE RESPECTIVE WATER TABLES AT 2, 6 AND 12 INCHES. IN EXPERIMENTS WITH THE VENTURI FLUME FOR SUBMERGED CONDITIONS IT HAS BEEN FOUND THAT WHERE THE SUBMERGENCE IS LESS THAN 95% THE MEAN ERROR IS LESS THAN 5% OF THE CALCULATED DISCHARGE.

A. L. FELLOWS MADE A TRIP THROUGH EASTERN COLORADO AND WESTERN KANSAS TO STUDY RESERVOIR DEVELOPMENTS AND POSSIBILITIES AND THE CONDITIONS SURROUNDING IRRIGATION BY PUMPING. IN WESTERN KANSAS A CONSIDERABLE PUMPING DEVELOPMENT IS TAKING PLACE.

AT THE REQUEST OF THE KNIGHTSEN IRRIGATION DISTRICT, F. C. SCOBEEY MADE A STUDY OF HYDRAULIC PRESSURES ON VARIOUS PARTS OF THEIR CONCRETE PIPE IRRIGATION SYSTEM TO FIND THE CAUSES OF BURSTING OF THE PIPE. IT WAS FOUND THAT PRESSURES APPROACHED THE LIMIT FOR REASONABLE SAFETY AND THAT THESE PRESSURES, ADDED TO THE STRESSES SET UP BY EXPANSION DUE TO ABSORPTION OF WATER, CAUSED THE FAILURES. THE REMEDY SUGGESTED IS TO WIND EACH PIPE UNIT AT THE DANGEROUS PLACES WITH SINGLE BANDS OF HEAVY GALVANIZED WIRE TWISTED SNUGLY AGAINST THE PIPE.

UNDER THE DIRECTION OF L.M. WINSOR, ARTHUR FIFE HAS DISTRIBUTED QUESTIONNAIRES IN A SECTION OF ESCALANTE VALLEY, UTAH, AS PART OF A STUDY OF GROUND WATER DEVELOPMENT FOR IRRIGATION. STUDIES MADE OF RESULTS OF EARLY IRRIGATION IN MILLARD COUNTY, INDICATE THAT UNDER FAVORABLE CONDITIONS THE RESULTS ARE DECIDEDLY BENEFICIAL.

UNDER THE DIRECTION OF F. L. BIXBY, MESSRS. HARDMAN AND STOCKWELL OUTLINED THE BOUNDARIES OF LAND TO BE INCLUDED IN A DRAINAGE STUDY TO BE STARTED IN OCTOBER, IN THE MUDDY VALLEY OF NEVADA. IN LAS VEGAS VALLEY 32 FLOWING WELLS WERE MEASURED DURING THE MONTH.

D.W. BLOODGOOD REPORTS TWO OUTSTANDING FEATURES OF THE COTTON IRRIGATION EXPERIMENTS, NAMELY: THE PLATS THAT WERE IRRIGATED EVERY TWO WEEKS STILL SHOWED A GOOD VIGOROUS GROWTH THOUGH THE BOLLS WERE NOT OPENING AS READILY AS THOSE ON OTHER PLATS; THE PLATS THAT RECEIVED A HEAVY IRRIGATION (8 INCHES) BEFORE PLANTING, WILL PROBABLY YIELD MORE THAN THE OTHER SERIES.

RURAL ENGINEERING

S.J. DENNIS IS MEASURING THE HEAT TRANSMISSION THROUGH FLOORS OF REFRIGERATOR CARS AT ARLINGTON FARM, AS A PART OF A GENERAL INVESTIGATION TO DETERMINE WHETHER THE DRIP FROM MELTING ICE IS DETRIMENTAL TO THE

INSULATION; THE EXPERIMENTS RELATE TO BODY-ICED SHIPMENTS, I.E. WHERE ICE IS USED IN DIRECT CONTACT WITH THE CAR LADING. THIS IS A JOINT INVESTIGATION BY PUBLIC ROADS, PLANT INDUSTRY AND THE INTERSTATE COMMERCE COMMISSION. MR. DENNIS HAS RECENTLY MADE A BRIEF INVESTIGATION OF THE POSSIBILITIES OF USING MECHANICALLY COOLED ICE-CREAM CABINETS FOR THE EXPERIMENTAL FREEZING OF SAMPLES OF DRAIN TILE AND HAS MADE A REPORT ON THE SAME. A PORTABLE PRE-COOLER, FOR THE EXPERIMENTAL PRECOOLING OF GREEN VEGETABLES BY ICE WATER, DESIGNED BY MR. DENNIS, HAS BEEN CONSTRUCTED AT THE DEPARTMENT SHOPS AND WILL BE USED NEXT SPRING TO DETERMINE WHETHER PRECOOLING CAN REPLACE BODY ICING.

IN COOPERATION WITH THE NATIONAL ASSOCIATION OF FARM EQUIPMENT MANUFACTURERS AND THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS, THIS DIVISION WILL TAKE UP THE SUBJECT OF FARM OPERATING EQUIPMENT RESEARCH. PROF. J.B. DAVIDSON, HEAD OF THE DEPARTMENT OF AGRICULTURAL ENGINEERING, IOWA STATE COLLEGE, HAS BEEN CHOSEN TO HEAD THIS PROJECT. TO ASSIST HIM THE SECRETARY HAS APPOINTED AN ADVISORY COUNCIL COMPOSED OF EIGHT MEMBERS EACH OF THE TWO ORGANIZATIONS ABOVE MENTIONED. THE WORK WILL CONSIST IN COMPILING THE RESULTS OF RESEARCH ALREADY ACCOMPLISHED IN THE FIELD OF FARM OPERATING EQUIPMENT AND IN DETERMINING THE FURTHER RESEARCH THAT IS URGENTLY NEEDED.

PLANS WERE DRAWN UP FOR A GREEN HOUSE TO BE BUILT BY THE OFFICE OF SUGAR PLANT INVESTIGATIONS ON THE ARLINGTON FARM. PLANS ARE NOW AVAILABLE FOR A FOX HOUSE AND A FOX PUP HOUSE.

INFORMATION SERIES WERE PREPARED ON THE SUBJECT OF LOG HOUSE CONSTRUCTION AND DAM-PROOFING CONCRETE AND A THIRD IS IN PREPARATION ON LAND CLEARING.

FOR THE PAST THREE MONTHS W. V. HUKELL HAS BEEN ENGAGED PRINCIPALLY IN ACCOMPANYING EXPERIMENTAL SHIPMENTS OF LETTUCE FROM WESTERN POINTS TO THE EASTERN MARKETS.

SURPLUS WAR EXPLOSIVES.

GEORGE R. BOYD LEFT WASHINGTON ON SEPTEMBER 30 FOR A TRIP TO THE DUPONT PLANT IN WASHINGTON STATE. EN ROUTE HE WILL VISIT THE COOPERATIVE AGENCIES IN THE NORTHERN AND NORTHWESTERN STATES, RETURNING VIA THE MIDDLE WEST ABOUT DECEMBER 1.

IN COOPERATION WITH THE INSTITUTE OF MAKERS OF EXPLOSIVES, A MOVING PICTURE FILM IS BEING PREPARED SHOWING THE USE AND HANDLING OF EXPLOSIVES ON THE FARM.

UP TO SEPTEMBER 30, 16,517,100 POUNDS OF PYROTOL HAD BEEN DISTRIBUTED TO FARMERS FOR LAND CLEARING. DISTRIBUTION OF THIS EXPLOSIVE WAS BEGUN IN AUGUST, 1924.

PERSONAL

A. O. KAY, ASSOCIATE DRAINAGE ENGINEER, FORMERLY STATIONED AT COCOA, FLORIDA, HAS RESIGNED EFFECTIVE OCTOBER 12, TO TAKE A POSITION WITH THE FORT PIERCE BANK AND TRUST COMPANY, FORT PIERCE, FLORIDA, AT A HIGHER SALARY.

MR. KAY HAS BEEN WITH THIS DIVISION SINCE 1918. HIS WORK HAS CONSISTED CHIEFLY OF A STUDY OF IRRIGATION AS PRACTICED IN FLORIDA, ALTHOUGH HE HAS ALSO INVESTIGATED THE SHRINKAGE OF DRAINED MUCK SOILS, RUN-OFF FROM THE EAST COAST LAND AND THE RELATION OF DRAINAGE TO A SERIOUS DISEASE OF CITRUS TREES WHICH PREVAILS IN FLORIDA.

C.A. TAYLOR, JR., HAS BEEN TRANSFERRED FROM FORT COLLINS, COLO. TO SOUTHERN CALIFORNIA, WHERE HE WILL BE ENGAGED, UNDER THE DIRECTION OF H.F. BLANEY, IN DUTY OF WATER STUDIES IN COOPERATION WITH THE STATE.

PUBLICATIONS AND REPORTS

THE FOLLOWING REPORTS HAVE BEEN SUBMITTED TO THE WASHINGTON OFFICE:

SILTING STUDIES AT THE VERO AND GIFFORD OUTLETS OF THE INDIAN RIVER FARMS DRAINAGE DISTRICT, INDIAN RIVER COUNTY, FLORIDA, BY A. O. KAY.

SOIL MOISTURE STUDIES IN RELATION TO DISEASED CITRUS TREES IN BREVARD COUNTY, FLORIDA, BY A. O. KAY.

SUBSIDENCE OF PEAT SOILS IN FLORIDA, BY A. O. KAY.

TILE DRAINAGE OF F.K. BROADHURST FARM, JOHNSTON COUNTY, N.C., BY F. O. BARTEL.

PROGRESS REPORT ON THREE YEARS' EXPERIMENTS ON THE DRAINAGE OF THE SUGAR CANE LANDS OF SOUTHERN LOUISIANA, BY F. E. STAEBNER.

PROGRESS REPORT ON THREE YEARS' EXPERIMENTS ON THE IRRIGATION OF THE SUGAR CANE LANDS OF SOUTHERN LOUISIANA, BY F. E. STAEBNER.

"NET REQUIREMENTS OF CROPS FOR IRRIGATION WATER IN THE MESILLA VALLEY, N.M." BY D. W. BLOODGOOD AND ALBERT S. CURRY, HAS BEEN PUBLISHED AS BULLETIN No. 149 OF THE NEW MEXICO AGRICULTURAL EXPERIMENT STATION.

A RESUME AND PROGRESS REPORT TO OCTOBER, 1925, COVERING COOPERATIVE IRRIGATION INVESTIGATIONS IN THE SACRAMENTO-SAN JOAQUIN DELTA, CALIFORNIA, BY O.V.P. STOUT, HAS BEEN RECEIVED AT BERKELEY.

E.J. HOFF HAS PREPARED AN ARTICLE ENTITLED "THE CURRENT METER" CONSISTING OF 31 QUESTIONS AND ANSWERS, IN MANUSCRIPT FORM.

AT THE REQUEST OF THE STATE ENGINEER OF UTAH, R.A. HART HAS PREPARED A MEMORANDUM ON THE SITUATION IN BONNEVILLE IRRIGATION DISTRICT, UTAH.

TWO REPORTS BY R.P. TEELE AND PAUL A. EWING ON THE ECONOMIC LIMITS OF THE COST OF WATER FOR IRRIGATION IN THE WYOMING DEVELOPMENT COMPANY, WYO. AND WENATCHEE RECLAMATION DISTRICT, WASH., RESPECTIVELY, HAVE BEEN RECEIVED AT THE BERKELEY OFFICE.

"THE PRINCIPLES OF IRRIGATION ENGINEERING" IS THE TITLE OF A NEW BOOK BY F. E. KANTHACK, PUBLISHED BY LONGMANS, GREEN AND COMPANY, LONDON. IT IS A BOOK OF 300 PAGES, THE SUBJECT MATTER APPLYING ESPECIALLY TO CONDITIONS IN SOUTH AFRICA.

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RELATIONS AND RESULTS

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